

PROCEEDINGS
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ELMINTHIDAE OF LIBERIA
(COLEOPTERA)

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Almost all of the specimens discussed in this paper were collected by Dr. C. C. Blickenstaff at Suakoko, Liberia, most frequently by light trap. I presume that they were captured during their first flight, just after eclosing. Indeed, in all of the specimens dissected for the extraction of the genitalia, the abdomen was empty and the tergal sclerites were closely depressed against the sternal ones.

Twenty-seven species are listed here; five are new to science, the others, new to Liberia, belong to species already reported from several countries of West Africa.

Types and paratypes are deposited in the National Museum of Natural History, Smithsonian Institution collections. Some paratypes are deposited in the Institut royal des Sciences naturelles (Brussels) and in the author's collections.

I thank Dr. Paul J. Spangler, Department of Entomology of the National Museum of Natural History, Smithsonian Institution who not only gave me the opportunity to study these Liberian elmids, but was kind enough to revise the English translation of the manuscript.

Subfamily LARINAE

Potamodytes tuberosus Hinton

1937. Ann. Mag. Nat. Hist., ser. 10, 19:294.

Reported Distribution: This species was described from Ogoué, Sam Kita (French Congo), and was reported from Brazzaville Congo, and from the Central African Republic by Delève (1967a, 1967b, 1970).

Specimens Examined: 16 specimens from Suakoko, Liberia, between

March and June 1952; 1 specimen from Gibi, W. W. Mann (Smithsonian-Firestone Exp. 1940).

Potamodytes antennatus (Dohrn)

1882. Stett. Ent. Zeit., 43:251.

Reported Distribution: Described from Guinea; this species was reported also from the Ivory Coast by Delève (1968).

Specimens Examined: 9 specimens, Liberia, 8 miles Samoy Trail, 27 Apr. 1952, C. C. Blickenstaff.

***Potamodytes spangleri*, new species**

Male: Length, 9.5 mm; breadth, 2.6 mm. Moderately convex; black above; antenna less dark, with first segment rufous; pubescence grayish, short, recumbent.

Head feebly impressed along the inner margins of the eyes; surface very densely, finely punctate.

Pronotum (Fig. 1) trapezoidal; punctate as the head; moderately convex on the disc; as long as broad on apex (1.75 mm); broadest at base where it is $1\frac{1}{4}$ times broader than long (2.75 mm:1.75 mm). Apical margin truncate, almost a right angle. Sides moderately arcuate, scarcely and briefly sinuate after the apical angles which are inconspicuous and rounded at apex; basal angles briefly rounded at apex, feebly reflexed. Apical transverse impression deep and distinct on middle where it cuts disc at about 0.5 mm behind apical margin; median longitudinal impression very feeble, with a shallow triangular impression and 2 punctures at base in front of scutellum. On each side, on basal third, a deep oblique sulcus limits internally the large depressed area of the posterior angle.

Elytra about 4 times as long as pronotum (7.5 mm:1.75 mm), as broad at base as pronotum, narrowed from humeri to apex. Humeri gibbous, separated by a longitudinal depression from the more convex part of the elytra; this somewhat gibbous portion extending on basal fifth between 1st and 4th striae. Strial punctures distinct; intervals punctate as head and pronotum. Outer apical angle in the shape of a rather long triangular spinous process, about 0.7 mm long (Fig. 2).

Genitalia (Fig. 3) 2.4 mm long; parameres more or less rectangular, very long (1.3 mm); apex of median lobe regularly curved, followed on dorsal side by a very small spine.

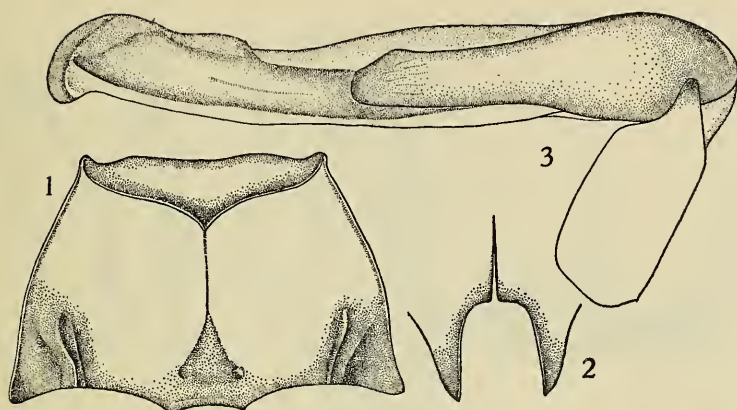
Female: Externally similar to ♂ except metasternum and abdomen more concave (as is usual in the genus).

Holotype: ♂, Liberia, Suakoko, 20 Mar. 1952, C. C. Blickenstaff.

Allotype: Same locality, 18–19 Mar. 1952 (light trap).

Paratypes: 33 specimens, same locality, on diverse dates from December 1951 to March 1952; 1 ♂, 8 miles Samoy Trail, Liberia, 27 Apr. 1952, on wet rocks (this specimen has rufous coloration).

This species belongs to the *africanus* Boheman group characterized



FIGS. 1-3. *Potamodytes spangleri*, new species: 1, pronotum, schematic, about $\times 25$; 2, elytral apices, about $\times 25$; 3, aedeagus, about $\times 50$.

by the form of the apices of the elytra together with the form of the male genitalia which has more or less rectangular parameres. It may be distinguished from other species of this group by the deep basal sulcus of the pronotum, by the length of the parameres and by the curved apex and small dorsal spine of the median lobe.

I am pleased to name this species for Dr. Paul J. Spangler.

Omotonus angolensis Delève

1963. Bull. Ann. Soc. Roy. Ent. Belg., 99:439.

Reported Distribution: Angola.

Specimens Examined: 2 ♂, Suakoko, 31 Jan. and 10 July 1952.

Subfamily ELMINTHINAE

Stenelmis aphela Alluaud

1933. Ann. Soc. Ent. Fr., 102:156.

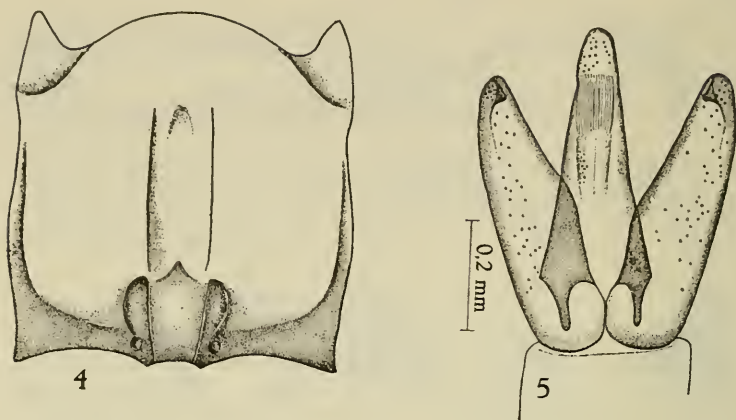
Reported Distribution: This species was described from the Ivory Coast and Upper Volta; it was reported also from Guinea by Delève (1966a).

Specimens Examined: 19 specimens from Suakoko, 26 Feb. 1952, 7 Nov. 1952, and 11-22 Oct. 1952.

Stenelmis simplex Delève

1938. Rev. Zool. Bot. Afr., 31(3-4):360.

Reported Distribution: Described from the Belgian Congo (Mayumbe); also reported from Cameroon by Delève (1963) and from Brazzaville Congo, by Delève (1963, 1967a).



FIGS. 4-5. *Stenelmis liberiana*, new species: 4, pronotum, female, about $\times 50$; 5, aedeagus.

Specimen Examined: 1 ♂, Suakoko, 18 Nov. 1952.

Stenelmis cristata Delève

1966. Bull. Ann. Soc. Roy. Ent. Belg., 102:63.

Reported Distribution: Described from the Ivory Coast and reported from Cameroon and from Brazzaville Congo, by Delève (1966, 1967a).

Specimens Examined: 93 specimens from Suakoko, between December 1951 and February 1953.

Stenelmis phymatodes Alluaud

1933. Ann. Soc. Ent. Fr., 102:156.

Reported Distribution: This species was described from the Ivory Coast; it was reported also from Upper Volta by Alluaud (1933) and from Guinea by Delève (1966a).

Specimens Examined: 34 specimens, Suakoko, between 1951 and July 1952.

Stenelmis laeticollis Delève

1966. Bull. Ann. Soc. Roy. Ent. Belg., 102:69.

Reported Distribution: Ivory Coast.

Specimens Examined: 17 specimens, Suakoko, between December 1951 and March 1953.

Stenelmis clavareau Grouvelle

1900. Ann. Soc. Ent. Belg., 44:425.

Reported Distribution: This species was described from the Belgian

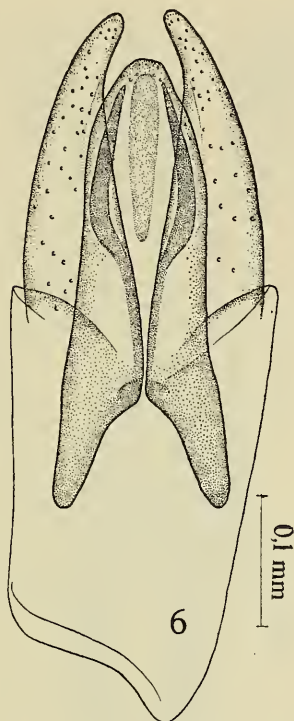


FIG. 6. *Microdinodes blickenstaffi*, new species, aedeagus.

Congo; it was reported also from Guinea, Upper Volta, Angola, and the Central African Republic by Delève (1966a, 1966b, 1970).

Specimen Examined: 1 ♂, Suakoko, 19 Dec. 1951.

Stenelmis merella Hinton

1941. Trans. roy. Ent. Soc. Lond., 91(3):101.

Reported Distribution: Sierra Leone.

Specimens Examined: 13 specimens, Suakoko, between December 1951 and November 1952.

Stenelmis decellei Delève

1966. Bull. Ann. Soc. Roy. Ent. Belg., 102:85.

Reported Distribution: Ivory Coast.

Specimens Examined: 38 specimens, Suakoko, between December 1951 and July 1952.

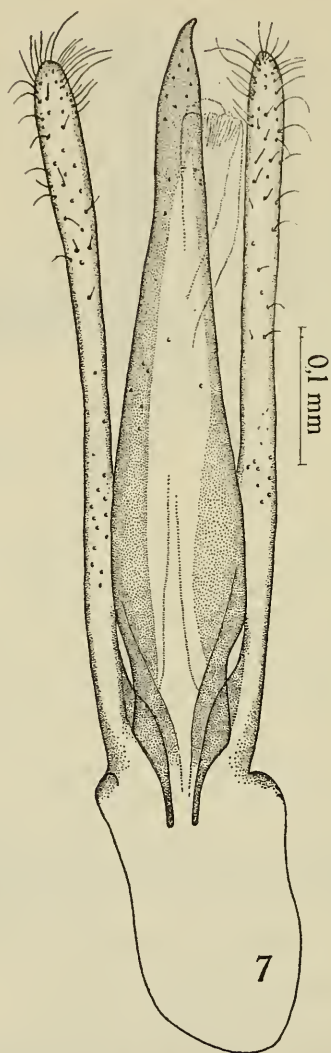


FIG. 7. *Pachelmis bigibbulosa*, new species, aedeagus.

Stenelmis soror Delève

1938. *Rev. Zool. Bot. Afr.*, 31(3-4):362

Reported Distribution: This species was described from Faradje (Belgian Congo); also reported from the Ivory Coast and from the Central African Republic by Delève (1968, 1970).

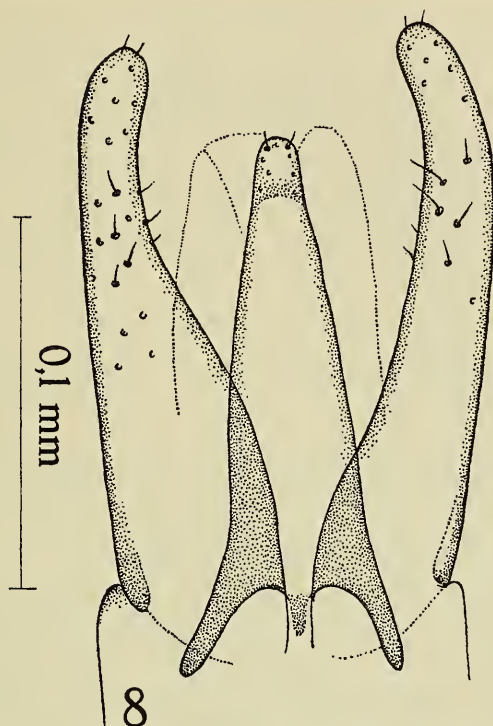


FIG. 8. *Helminthopsis marginalis*, new species, aedeagus.

Specimens examined: More than 100 specimens, Suakoko, between December 1951 and October 1952.

***Stenelmis liberiana*, new species**

Male: Length, 3.9 mm (including head). Oblong, about $2\frac{3}{8}$ times longer than broad at greatest width, moderately convex. Head and pronotum blackish, elytra less dark; antennae and tarsi rufous. Ventral surface dark rufous. Pubescence of dorsal surface grayish, very short.

Head depressed on each side, margin of front raised along inner border of eye; frontoclypeal suture straight. Anterior margin of clypeus, when seen from above, feebly arcuate medially; lateral angles rounded, produced anteriorly. Surface of head on front with shallow punctures, much broader than their intervals.

Pronotum slightly longer than broad at base (1.2 mm:1.1 mm) and base broader than apex (1.1 mm:0.87 mm). Sides feebly sinuate behind apical angles and before hind angles; apical angles acute, strongly pro-

duced; posterior angles acute, slightly diverging; base and lateral margin narrowly depressed, more broadly near basal angles; disc regularly convex; median longitudinal impression broader than scutellum but not very deep, obliterated near apex; sides of impression strongly raised at base; 2 punctures on front of scutellum in depressed area. Surface with large, shallow punctures, separated by less than 1 diameter; surface between punctures covered with very short, feltlike pubescence.

Elytra about twice as long as pronotum; a little broader at humeri than base of pronotum; about $1\frac{2}{3}$ times as long as broad at greatest combined width (2.5 mm:1.5 mm), which is about $\frac{2}{3}$ of their length. 3rd interval briefly but distinctly raised at base; sublateral carina (on 6th interval) prominent, extending from base to apical declivity; other intervals flat, broader on disc than the stria punctures which are large and deep, separated longitudinally by 1 or less than 1 diameter; 2nd stria ending before apex; 3rd and 4th joined at beginning of apical declivity.

Sides of prosternum granulose; intercoxal process rugose. Metasternum depressed behind on median line where it is rugose, coarsely punctured, gibbous on anterior part, with a round, deep depression between posterior coxae; sides granulose; median longitudinal line impressed posteriorly, very reduced anteriorly. Abdomen with middle region of 1st sternum depressed, coarsely punctate, granulose on the sides; 2nd sternum strongly punctate on anterior half, finer posteriorly; almost indistinctly punctate on the other sterna; emargination of middle apical margin of 5th sternum semicircular.

Posterior side of hind trochanter with a low median tubercle. Middle and hind tibiae with an acute tooth on middle of inner side, this tooth somewhat stronger on middle tibia.

Genitalia (Fig. 5): median lobe 560μ long; parameres 465μ long (at external margin) apices with a ventral recurved tooth; striated collar about 110μ long.

Female: Differs from ♂ as follows: (1) pronotum (Fig. 4) reddish brown on basal region; (2) feltlike pubescence less dense; (3) sides of median longitudinal impression not only become strongly raised at base but constitute 2 protuberances; (4) base of median impression, between the protuberances, moderately raised in the form of a triangle; (5) metasternum without depression behind, without gibbosity on anterior part; (6) posterior margin of hind trochanter without tubercle; (7) middle and hind tibiae without tooth on inner side.

Holotype: ♂, Liberia, Suakoko, 19 Dec. 1951, C. C. Blickenstaff.

Allotype: With same collection data.

Paratypes: 82 ♂ ♂, 95 ♀ ♀ with same data; 101 additional specimens from dates between 18 Nov. and 11 Dec. 1952.

By the middle and hind tibiae of the male and by the form of the apices of the parameres, this species is related to *Stenelmis clavareau*

Grouvelle from which it is easily distinguished (especially the females) by the sculpture of the pronotum.

Microdinodes nigrolineatus Delève

1937. Bull. Ann. Soc. Ent. Belg., 77:156.

Reported Distribution: This species was described from Mayumbe (Belgian Congo) and was reported from Angola and Brazzaville Congo, by Delève (1966b, 1967a, 1967b).

Specimens Examined: 15 specimens, Suakoko between November 1951 and November 1952.

Microdinodes illustris (Grouvelle)

1902. Ann. Soc. Ent. Belg., 46:190.

Reported Distribution: Described from Kinshasa (Belgian Congo) and was reported from Angola and from Brazzaville Congo, by Delève (1966b, 1967a).

Specimens Examined: 12 specimens, Suakoko; 27 Mar., 24 June, and 11–22 Dec. 1952.

Microdinodes balfouri Delève

1967. Bull. Ann. Soc. Roy. Ent. Belg., 103:435.

Reported Distribution: Described from Northern Rhodesia and was reported from Angola by Delève (1970).

Specimens Examined: More than 100 specimens, Suakoko, between December 1951 and November 1952.

Microdinodes blickenstaffi, new species

Male: Length, 2 mm. Oblong, a little more than twice as long as broad at greatest width. Head and pronotum black. Elytra dark brown with 3 yellow spots on each elytron; the 1st spot on the humeral callosity; the 2nd spot orbicular, at base, on intervals 2–4; the 3rd spot elongate, subapical, on interval 4–5. Legs and antennae reddish brown. No perceptible pubescence.

Head without impressions, surface densely and very minutely alutaceous, with some small widely separated punctures.

Pronotum slightly broader at base than long (0.61 mm:0.58 mm); about a third narrower at apex than at base (0.5 mm:0.61 mm); broadest point (0.66 mm) before basal middle. Lateral edges thick, double, chiefly at base. Sides arcuate, feebly sinuate as far as greatest width, then straight to apical angles which are acute and produced; basal angles acute. No carina nor sublateral sulcus; median longitudinal impression distinct, a little more abbreviated at apex than at base; 2 lines, finely raised, in front of scutellum. Surface finely alutaceous, with small, well-separated blunt granules.

Elytra about $2\frac{3}{4}$ times as long as pronotum, distinctly broader be-

tween humeri than base of pronotum (0.8 mm:0.6 mm); slightly more than $1\frac{1}{2}$ times longer than broad combined at broadest point (1.41 mm:0.9 mm) which is near their midlength; striae feebly impressed at base; stria punctures broader than intervals; intervals flat, alutaceous as pronotum; 2nd, 4th, 6th, 7th and 8th intervals each with a row of fine, smooth granules; 6th row more prominent, extending to apical declivity.

Prosternal process coarsely punctate; hypomera alutaceous with rather large, well-separated punctures.

Metasternum coarsely punctate on disc, alutaceous on sides; median longitudinal impression deep and broad posteriorly, obliterated anteriorly, without distinct crest on each side of median impression. Abdomen alutaceous with an area of large punctures along anterior margin of first three segments, this area doubled on middle of anterior margin of first segment.

Base of claws strongly toothed.

Genitalia (Fig. 6) 530μ long; median lobe broadly linguiform, 335μ long, including the basal apophysis which enters rather deeply in the basal piece; parameres 205μ (at outer margin), arcuate and narrowed at distal apices; basal piece as long as median lobe.

Female: Externally similar to male, with median impression of metasternum less deep behind.

Holotype: ♂, Liberia, Suakoko, 19 Dec. 1951 (light trap, Blickenstaff).

Paratypes: 59 specimens with same data as holotype; 12 specimens from dates between February and March 1952.

Related to *M. multimaculatus* Delève and *elegans* Delève by the finely alutaceous cuticle and the absence of carina or sulcus on the pronotum. May be distinguished from these two species by the presence of a median longitudinal impression on the pronotum. But, as usual in this genus, the best distinctive character remains the male genitalia.

Helminthopsis elegans Alluaud

1933. Ann. Soc. Ent. Fr., 102:158.

Reported Distribution: Described from Upper Volta and reported from the Belgian Congo, Angola, and Ivory Coast by Delève (1938, 1966b, 1968).

Specimens Examined: 1 ♂, 1 ♀, Suakoko, 20–29 Nov. 1952, and 19 Dec. 1951.

Helminthopsis reticulata Delève

1945. Bull. Mus. roy. Hist. nat. Belg., 21(10):5.

Reported Distribution: Described from the Belgian Congo, this species was reported from Brazzaville Congo, by Delève (1967a, 1967b).

Specimens Examined: 1 ♂, Suakoko, 13 Dec. 1951; 2 specimens, 19 Dec. 1951.

Helminthopsis punctulata Delève

1945. Bull. Mus. roy. Hist. nat. Belg., 21(10):7.

Reported Distribution: This species was described from the Belgian Congo and was reported from Angola and from Brazzaville Congo, by Delève (1966a, 1966b).

Specimens Examined: 2 ♂♂, 2 ♀♀, Suakoko, 19 Dec. 1951 and 26 Feb. 1952.

Helminthopsis quadrinotata Delève

1965. Bull. Inst. roy. Sci. nat. Belg., 41(11):18.

Reported Distribution: This species was described from Brazzaville Congo.

Specimens Examined: 8 specimens, Suakoko, 19 Dec. 1951, 26 Feb. 1952, and Nov. 1952.

Helminthopsis marginalis, new species

Male: Length, 1.7 mm. Macropterous. About twice as long as broad at greatest width. Head appearing grayish because of alutaceous sculpture. Pronotum black. Elytra dark brown; shining; with 2 elongate clearer, alutaceous spots on the inner edge of the sublateral carina, on intervals 4 and 5; the 1st spot extending from base to basal third; the 2nd spot on the declivity, interrupted before apex; lateral part (between carina and lateral margin) completely of the same clear alutaceous color. Ventral surface brownish. Antennae and legs clearer. Pubescence short; sparsely distributed on pronotum; arranged in rows on elytral intervals.

Head with sparse granules, finer than facets of eyes, showing through the grayish alutaceous sculpture.

Pronotum more convex on anterior part than posteriorly; slightly broader at base than long (0.53 mm:0.47 mm), narrowed at apex (0.41 mm), greatest width (0.60 mm) before the basal half. Sides thickened, crenulate, regularly curved, feebly sinuate before basal angles which are almost rectangular; apical angles acute, narrow, deflexed. Median longitudinal impression entire, narrow, bordered with a narrow shiny zone sparsely punctate; 2 punctures in front of scutellum; on each side closer to lateral margin than to middle, a distinct sulcus raised and finely carinate on outer side, ending before basal half in an oblique, rather broad depression. Surface narrowly smooth and shiny on middle of base, more broadly in the area laterally limited by the sulcus; rest of surface alutaceous with sparse granules, a few coarser than facets of eyes.

Elytra distinctly broader at humeri than pronotum at base (1.2 mm:0.47 mm), then feebly enlarged, with greatest width slightly behind midlength, where they are 1½ times longer than broad combined (1.2 mm:0.83 mm). First four rows of punctures marked at base by a large, deep puncture; punctures in the rows generally more distant than 1 diameter, narrower than intervals; 6th interval narrow, raised in a fine,

granulose carina; punctures of 5th and 6th rows (on both sides of the carina) closer; punctures of 7th and 8th rows (in the alutaceous lateral region) finer, more distant than in the other rows. Bear a row of broad, close punctures along the granulose crenulate margins.

Intercostal process of prosternum alutaceous with sparse granules, about as coarse as facets of eyes; hypomera more finely alutaceous, with granules broader and more distant. Metasternum with coarse punctures, broader than their interstices; cuticle alutaceous; median longitudinal impression distinctly abbreviated anteriorly. Abdomen finely alutaceous, with some superficial punctures on first segment.

Genitalia (Fig. 8) 335μ long; median lobe triangular (140μ) with a few very short hairs on apex; basal apophyses entering only a short distance into basal piece; parameres (140μ , on outer side) extending beyond apices of median lobe, with a few short spines on their distal half; basal piece 215μ .

Female: Externally similar to male.

Holotype: ♂, Liberia, Suakoko, 26 Feb. 1952 (Blickenstaff).

Paratypes: 17 specimens with same data as holotype; 40 specimens from diverse dates between December 1951 and December 1952.

This species is related to *H. quadrinotata* Delève, especially by the form of the male genitalia. It may be distinguished from this species by its alutaceous spots on elytral intervals 4 and 5 and the lateral region also alutaceous, while on *quadrinotata* the spots are yellow, otherwise disposed and not at all alutaceous. On some specimens the two inner alutaceous spots are joined.

Helminthopsis (Elmidoliana) zambezica Delève
1965. Bull. Inst. roy. Sci. nat. Belg., 41(11):27.

Reported Distribution: This species was described from Northern Rhodesia (Zambezi Rapids) and was reported from Angola, Brazzaville Congo, and the Ivory Coast by Delève (1966b, 1967a, 1968).

Specimens Examined: 58 specimens from Suakoko on diverse dates between December 1951 and February 1952.

***Pachyelmis bigibbula*, new species**

Male: Length, 1.4 mm. About $1\frac{4}{5}$ times as long as broad at greatest width; convex; acuminate and strongly declivous behind; glabrous. Cuticle reddish brown, pronotum darker, head black.

Head without impression, alutaceous with distant granules smaller than facets of eyes.

Pronotum about $1\frac{1}{4}$ times broader than long (0.63 mm:0.5 mm); broadest point at base; strongly narrowed at apex (0.38 mm). Lateral edges crenulate, granulose; sides regularly curved, deflexed toward the apical angles which are acute, invisible from above; basal angles almost rectangular. Disc regularly convex with a very shallow median longitudinal impression; very finely punctate, somewhat alutaceous, with very

small distant granules, each of these granules being the center of a small areola; sublateral sulcus extending from base to near apex; area between sulcus and lateral margin a little raised and densely covered with large, somewhat elongated granules.

Elytra as broad as pronotum at base, nearly twice as long as pronotum, about $1\frac{1}{6}$ times longer than broad at greatest combined width (0.9 mm:0.78 mm) which is slightly behind their midlength. On each, 8 rows of large rather deep punctures broader than intervals, with exception of 1st (sutural) which is broader and depressed on basal part along gibbosity of 2nd interval; this gibbosity located just behind base and about 0.16 mm long; 3rd interval with a row of slightly distinct granules, beginning slightly behind base and extending to midlength; 5th and 7th intervals also with a row of granules but extending to apex; row of granules of 8th interval starting from humeral gibbosity (as in seventh one) but shorter; sutural interval densely microscopically granulose, less shiny than the others.

Prosternal process finely granulose on anterior part, almost inconspicuously so posteriorly; hypomera covered with large, elongated granules. Metasternum alutaceous and granulose on disc; median longitudinal impression deep and broad posteriorly, obliterated anteriorly; adjacent to posterior margin of middle coxal cavity, an area of very large punctures; sides alutaceous. Abdomen alutaceous; 1st segment feebly granulose, with an area of large punctures along anterior margin; on each side, behind posterior coxa, granules rather regularly disposed in a row crossing first four segments; granules present also on lateral sides of the 4th segment and near lateral margins of 1st segment.

Genitalia (Fig. 7) 745μ long; median lobe (length 575μ) ending at apex in a rather short point; parameres long (510μ) narrow, slightly broadened at apices which bear very fine, rather long hairs; basal piece short (195μ).

Female: Externally similar to male.

Holotype: ♂, Liberia, Suakoko, 26 Feb. 1952, C. C. Blickenstaff.

Paratypes: More than 200 specimens, from the same locality, on diverse dates from December 1951 to March 1952.

Closely related to *P. madudana* Delève, from which it may be distinguished at once by the presence of small gibbosity on the base of the second interval of the elytra.

Helminthocharis schoutedeni Delève

1938. Rev. Zool. Bot. Afr., 31(3-4):372.

Reported Distribution: This species was described from Uele (Belgian Congo) and was reported from the Central African Republic by Delève (1970).

Specimens Examined: 14 specimens, Suakoko, on diverse dates between December 1951 and November 1952, (light trap).

This very minute species is rarely collected.

Pseudomacronychus scutellatus Delève

1965. Bull. Inst. roy. Sci. nat. Belg., 41(22):7.

Reported Distribution: This species was described from Kivu; the subspecies *circumcinctus* Delève (1968) was reported from the Ivory Coast.

Specimens Examined: 14 specimens, Suakoko, between December 1951 and May 1952.

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